Response to Inspector's questions regarding the critical path

Inspector's question: 26 October 2010

"In our conclusions from the Exploratory Meeting we described the potential role of the then-emerging LIPP (now EiP 85) in helping to indicate the realism or otherwise of the expected year-by-year completion of dwellings at the various major sites as indicated at p111 of the JCS. Now that more evidence has been compiled in relation to highway schemes, P&R, BRT, and water infrastructure (including sewerage) is it possible for GNDP to present a reworked p111 linked to a critical path commentary about how far and how fast development in the major growth locations could progress before hitting any infrastructure issues that will need to be resolved before a certain date before development can continue. As far as I can see EiP85 does not do this overtly.

This issue is likely to be an important one at a number of hearings sessions, central to the question of 'effectiveness', so it would be helpful if GNDP could produce a statement clarifying this issue."

GNDP response: 26 October 2010

For clarification can the Inspectors' advise whether the critical path diagrams in EIP84 which we have submitted is insufficient?

www.gndp.org.uk/our-work/joint-core-strategy/jcs-examination/#heading-5

The critical path does not appear in 'EIP 85 The LIPP' as we kept it as a separate document that is linked to the revised Appendix 7 (EIP 84) as it is fed from the associated Excel spreadsheet.

Our version of the critical path in EIP 84 is based on the approach used for the adopted Colchester Core Strategy is the Inspector suggesting that this is insufficient? We compiled Appendix 7 and a critical path as document EIP 85 in order to show delivery linked to infrastructure requirements. Colchester's Core Strategy is the only example we have been able to find that sets out a critical path as part of their Core Strategy, if what has been produced does not meet the Inspectors requirements please let us know and we will do our best to produce an additional statement.

Inspector's question: 27 October 2010

"While EiP84 goes some of the way, what I was seeking was a stronger quantitative handle on how much housing delivery could take place at each of the major locations before any failure of timely delivery of the related priority 1 infrastructure projects would prevent further development taking place."

GNDP response 10 November 2010

This response is intended to provide clarity to EIP 84: EM conclusions Issue 1: Infrastructure. It is not intended to replace or amend EIP 84, or the LIPP EIP 85. The Partnership has aimed to relate infrastructure to housing development thresholds at each major growth location for Priority 1 projects.

NE growth locations (Broadland District Council area):

Cross-referenced to Table 111 in submitted JCS

Rackheath Low-Carbon Development – Line 1 of Growth Locations Trajectory

Old Catton, Sprowston, Rackheath, Thorpe St. Andrew Growth Triangle (inside NDR) – Line 2 of Growth Locations Trajectory

Rackheath and rest of North East Growth Triangle

	2011/12		2012/13	2013/14	2014/15	2015/16	2016/17		2017/18	2018/19	2019/20		2020/21		2021/22	2022/23	2023/24	2024/25	2025/26	Total Units	Avge Build rate
Rackeath	180		230	230	230	230	230		230	230	230		230		230	230	230	230	230	3400	227
Remainder of NE Growth Triangle					125	225	350		350	350	350		350		350	350	350	350	350	3850	321
Cumulative total	**180**		**410**	**640**	**995**	**1450**	**2030**		**2610**	**3190**	**3770**		**4350**		**4930**	**5510**	**6090**	**6670**	**7250**	**7250**	

Transport

First 200 dwellings at Rackheath identified as Exemplar Phase - start anticipated 2011/12 – no constraints

Beyond the exemplar 200 growth is dependent on completion of the **Postwick Hub** constrained around 2012/13 which releases about 1600 further dwellings in NE sector

The remainder of growth within the Growth Triangle, beyond this first 1800 dwellings - constrained around 2016/17 is dependent on the **Northern Distributor Road**.

Electricity: A new grid substation on the existing site is required - Constrained to 2021/22. A new primary substation on a new site at Sprowston/Rackheath is required by 2026. Not expected to be any constraint to delivery of the electricity infrastructure.

Water supply – no constraint

Waste Water – potential constraint imposed by capacity of pumping main circa 4000 but subject to clarification from Anglian Water - constrained around 2020/21.

NB – Wastewater constraint would not apply at all to Rackheath if it meets its proposed 'water neutrality'. There would consequently be no waste water constraint at all on the Growth Triangle if the existing sewerage has around 4,000 unit capacity which could be used by the remainder of the Growth Triangle.

Note: Public Transport improvements -
Many corridor enhancements can be introduced ahead of the NDR and can be implemented early on, however EIP88 sets out ideal public transport delivery to support growth on the North East and it suggests significant intervention after approximately 500 dwellings – significant intervention timed around 2013. A number of the elements required for full BRT as set out in EIP88 can only be introduced after delivery of the NDR – constrained around 2016/17. Introduction of NDR dependent major NATS interventions before the NDR would worsen existing traffic conditions and ultimately lead to slower less reliable bus services.

Norwich (Norwich City Council area)

Cross-referenced to Table 111 in submitted JCS

Norwich City – Line 3 of Growth Locations Trajectory

New development in the City Centre starts 2014/15

Norwich

	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	Total Units	Avge Build rate
Norwich City	0	0	0	250	250	250	250	250	250	250	250	250	250	250	250	3000	250
Cumulative total	**0**	**0**	**0**	**250**	**500**	**750**	**1000**	**1250**	**1500**	**1750**	**2000**	**2250**	**2500**	**2750**	**3000**	**3000**	

Waste Water

Reinforcements to be staged as required. Incremental solutions are not expected to be an overriding constraint.

Public Transport improvements

Delivery not physically constrained by the provision of public transport. Public transport delivery for other growth locations includes enhancements in the city, but locations for growth in the city centre are not prescribed and interventions associated with growth will reflect the sites chosen in other DPDs.

Long Stratton (South Norfolk Council area) – Line 5 of Housing Trajectory

Cross-referenced to Table 111 in submitted JCS

Long Stratton – Line 5 of Growth Locations Trajectory

Long Stratton

	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	Total Units	Avge Build rate
Long Stratton	0	0	0	0	0	0	50	140	230	230	230	230	230	230	230	1800	250
Cumulative total	**0**	**0**	**0**	**0**	**0**	**0**	**50**	**190**	**420**	**650**	**880**	**1110**	**1340**	**1570**	**1800**	**1800**	

Long Stratton bypass: The trajectory on p111 of the Joint Core Strategy (Appendix 1 to this document) was based on the County Council's existing scheme for a bypass. The bypass will be directly funded by developer contributions and the housing and bypass can come forward together as an integrated scheme. The precise quantity of housing that can come forward before the bypass is completed will depend on the sites and design. Provided there is a commitment to funding and all dwellings contribute it is estimated 200 dwellings could delivered before the bypass is in place. Constrained around 2019/20

The growth at Long Stratton could progress as soon as the bypass is certain – this means the Housing Trajectory could be brought forward significantly.

Water supply: Not expected to be a constraint.

Waste Water: The Water Cycle Study (WCS) suggests 1400 dwellings can be delivered within the current capacity of the existing Waste Water Treatment Works (WWTW) - Constrained around 2024. However Anglian Water believes there will be a solution to achieve at least 1800 dwellings as allocated in the JCS. Therefore long-term it is not expected to be a constraint.

Electricity: Improvements to the substation are required at the end of the trajectory – Constrained post 2024. Not expected to be any constraint to delivery of the sub-station.

Public Transport improvements
Delivery not physically constrained by the provision of public transport. Infrastructure to support public transport service enhancements to support growth in this location requires bus priority intervention at the A47/A140 Harford junction after approx 500 dwellings – timed around 2020

South West growth locations (South Norfolk Council area)

Wymondham – Line 4 of Growth Locations Trajectory

Hethersett – Line 6 of Growth Locations Trajectory

Cringleford – Line 7 of Growth Locations Trajectory

South West locations

	2011/ 12	2012/ 13	2013/ 14	2014/ 15	2015 /16			2016/ 17	2017/ 18	2018/ 19	2019/ 20	2020/ 21	2021/ 22	2022/ 23	2023/ 24		2024/ 25	2025/ 26	Total Units	Avge Build rate
Wymondham	0	0	0	185	185			185	185	185	185	185	185	185	185		185	165	2200	183
Hethersett	0	0	0	50	90			175	175	175	175	100	60	0	0		0	0	1000	125
Cringleford	0	0	0	0	50			100	125	125	125	125	125	125	125		125	50	1200	109
Cumulative total	**0**	**0**	**0**	**235**	**560**			**1020**	**1505**	**1990**	**2475**	**2885**	**3255**	**3565**	**3875**		**4185**	**4400**	**4400**	

Wymondham dependencies:

Thickthorn junction: Development at Wymondham is constrained by delivery of improvements of the Thickthorn junction – It is estimated that cumulatively 500 dwellings can be built in Cringleford, Hethersett and Wymondham before the first improvement is needed. Work is ongoing to develop a revised scheme and it is likely that the Thickthorn interchange improvements can be phased, however there is not sufficient detail to specify the levels of growth that are dependent on individual elements at this time. - Constrained around 2015/16

Electricity: Improvements to the substation are required at the end of the trajectory – Constrained post 2024. Not expected to be any constraint to delivery of the sub-station.

Waste Water: Sewer reinforcements depend on sites and design. Ongoing discussions with Anglian Water suggest that there are solutions to reinforce existing sewers, expected to be a series of incremental schemes throughout the lifetime of development.

Public transport improvements: see below

Hethersett dependencies:

Thickthorn junction: Development at Hethersett is constrained by delivery of the Thickthorn junction – It is estimated that cumulatively 500 dwellings can be built in Cringleford, Hethersett and Wymondham before the first improvement is needed. It is likely that the Thickthorn interchange improvements can be phased, however there is not sufficient detail to specify the levels of growth that are dependent on individual elements at this time. - Constrained around 2015/16

Waste Water: Although the WCS suggests a southern strategic sewer , ongoing discussions with Anglian Water suggest that there are solutions to reinforce existing sewers, expected to be a series of incremental schemes throughout the lifetime of development.

Public transport improvements: see below

Cringleford dependencies:

Thickthorn junction: Development at Hethersett is constrained by delivery of the Thickthorn junction – It is estimated that cumulatively 500 dwellings can be built in Cringleford, Hethersett and Wymondham before the first improvement is needed. It is likely that the Thickthorn interchange improvements can be phased, however there is not sufficient detail to specify the levels of growth that are dependent on individual elements at this time. - Constrained around 2015/16

Waste Water: Although the WCS suggests a southern strategic sewer, ongoing discussions with Anglian Water suggest that there are solutions to reinforce existing sewers, expected to be a series of incremental schemes throughout the lifetime of development.

Public transport improvements: see below

Wymondham/Hethersett/Cringleford

Public transport improvements: Delivery in south west not physically constrained by the provision of public transport. However development of a successful and attractive service will be required to minimise car use and moderate the scale of capacity enhancements required at Thickthorn interchange. The key constraint to the delivery of effective public transport is priority to and through Thickthorn at about 500 units – timed around 2015/16 which is consistent with the anticipated need for Thickthorn improvements as a whole. Delay to Thickthorn is likely to delay overall growth in south west so public transport interventions will remain pegged to the implementation of Thickthorn. A market assessment indicates that BRT would be viable from about 2018.

South West growth locations (South Norfolk Council area)

Easton/ Costessey – Line 8 of Growth Locations Trajectory

	2011/12	2012/13	2013/14	2014/15		2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	Total Units	Avge Build rate
Easton/ Costessey	0	0	0	50		90	175	175	175	175	100	60	0	0	0	0	1000	125
Cumulative total	**0**	**0**	**0**	**50**		**140**	**315**	**490**	**665**	**840**	**940**	**1000**					**1000**	

Trunk road junctions: Trunk road junction improvements are a critical dependency with improvement required to start at the beginning of the trajectory. - constrained around 2015/16.

Waste Water: Although the WCS suggests a southern strategic sewer , ongoing discussions with Anglian Water suggest that there are solutions to reinforce existing sewers, expected to be a series of incremental schemes throughout the lifetime of development.

Public Transport:
Delivery not physically constrained by the provision of public transport. The development of a successful and attractive service will be required to minimise car use and moderate the scale of junction capacity enhancements required, particularly at trunk road junctions. There is existing infrastructure and services that can be extended. Whether, where and when there is a constraint will depend on actual site locations.

Major Growth Locations

Summary of Housing Related Critical Path Priority 1 Infrastructure

	Short Term					Medium Term					Long Term						
	2011/12	**2012/13**	**2013/14**	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**	**2020/21**	**2021/22**	**2022/23**	**2023/24**	**2024/25**	**2025/26**	**Total Units**	**Avge Build rate**
Rackheath	180	230	230	230	230	230	230	230	230	230	230	230	230	230	230	3400	227
Remainder of NE Growth Triangle				125	225	350	350	350	350	350	350	350	350	350	350	3850	321
Cumulative total	**180**	**410**	**640**	**995**	**1450**	**2030**	**2610**	**3190**	**3770**	**4350**	**4930**	**5510**	**6090**	**6670**	**7250**	**7250**	
Norwich City				250	250	250	250	250	250	250	250	250	250	250	250	250	250
Cumulative total				**250**	**500**	**750**	**1000**	**1250**	**1500**	**1750**	**2000**	**2250**	**2250**	**2500**	**2750**	**3000**	
Long Stratton							50	140	230	230	230	230	230	230	230	1800	250
Cumulative total							**50**	**190**	**420**	**650**	**880**	**1110**	**1340**	**1570**	**1800**	**1800**	
Wymondham				185	185	185	185	185	185	185	185	185	185	185	165	2200	183
Hethersett				50	90	175	175	175	175	100	60					1000	125
Cringleford				0	50	100	125	125	125	125	125	125	125	125	50	1200	109
Cumulative total				**235**	**560**	**1020**	**1505**	**1990**	**2475**	**2885**	**3255**	**3565**	**3875**	**4185**	**4400**	**4400**	
Easton/ Cosstessey				50	90	175	175	175	175	100	60					1000	125
Cumulative total				**50**	**140**	**315**	**490**	**665**	**840**	**940**	**1000**					**1000**	

Commentary

Note: Although the dates for infrastructure delivery are indicated, the trigger for individual interventions generally relates to the scale of housing growth. Consequently if the pace of growth varies from the trajectory provided at p111 of the Joint Core Strategy, the time period for delivery of interventions may shift accordingly.

Short Term 2011/16

The first key infrastructure constraint is Postwick Hub at 2012/13, required to release the early stages of development within the Growth Triangle. (There is a designed solution with planning consent)

By 2015/16, some trunk road junction improvements are required to release development at Easton/Costessey. The location can deliver overall numbers even with slippage of 4 years, so this need not be a constraint until 2019/20. In principle solutions exist.

The initial phase of Thickthorn junction improvements will need to be committed by about 2015/16, assuming all locations on A11 corridor deliver to the trajectory. Within the planned trajectory there is up to 4 years slippage for Hethersett, which could delay the requirement by up to a year. Thickthorn improvements are important in delivering a high quality public transport service to support growth. A phased scheme of improvements for Thickthorn is being devised, and the proposals continue to be investigated in more detail. A forum has been set up to share information and progress on delivery of improvements at Thickthorn between developer interests, the Highways Agency and the County Council.

Medium Term 2016/2021

By 2017/18 the position on funding and delivery of the NDR needs to be resolved.

Before 2019/2020, Long Stratton bypass needs to in place.

By 2020/21 public transport interventions for Long Stratton will be needed to support the bus services. Water infrastructure enhancements are needed for the North East, although these could be pushed back depending on the ability of the Rackheath Low Carbon community to deliver ‘water neutrality’.

Longer term 2021/2026

By 2024 electricity infrastructure constraints for Wymondham and Long Stratton need to be overcome.

By 2024/25 waste water infrastructure will be required for Long Stratton. If Long Stratton comes forward quicker, then an earlier commitment will be required.

Appendix one – Growth locations trajectory as shown on p.111 of JCS1

Growth locations

	District	Total Number of Units per Year																			Total Units	Average annual build rate
		2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26		
	Broadland	0	0	0	0	0	180	230	230	580	680	804	804	804	804	804	804	804	804	804	764	9,900	582
1	Rackheath Eco-Community						180	230	230	230	230	230	230	230	230	230	230	230	230	230	230	3,400	227
2	Remainder of Old Catton, Sprowston, Rackheath, Thorpe St Andrew Growth Triangle (inside NDR)									125	225	350	350	350	350	350	350	350	350	350	350	3,850	321
	Additional smaller sites around Broadland NPA (2,000)									170	170	170	170	170	170	170	170	170	170	170	130	2,000	167
	Additional sites around rural Broadland									55	55	54	54	54	54	54	54	54	54	54	54	650	54
3	**Norwich**	0	0	0	0	0	0	0	0	250	250	250	250	250	250	250	250	250	250	250	250	3,000	176
	Norwich (3,000)									250	250	250	250	250	250	250	250	250	250	250	250	3,000	250
	South Norfolk	0	0	0	0	0	0	0	0	525	655	875	950	1,039	1,128	978	898	778	778	778	683	10,065	592
4	Wymondham (2,200)									185	185	185	185	185	185	185	185	185	185	185	165	2,200	183
5	Long Stratton (1,800)												50	140	230	230	230	230	230	230	230	1,800	200
6	Hethersett (1,000)									50	90	175	175	175	175	100	60					1,000	125
7	Cringleford (1,200)										50	100	125	125	125	125	125	125	125	125	50	1,200	109
8	Easton/Costessey (1,000)									50	90	175	175	175	175	100	60					1,000	125
	Additional smaller sites around South Norfolk NPA (1,800)									150	150	150	150	150	150	150	150	150	150	150	150	1,800	150
	Additional sites around rural South Norfolk									84	84	84	84	83	83	83	83	83	83	83	83	1,000	83
	Additional urban capacity in rural South Norfolk									6	6	6	6	6	5	5	5	5	5	5	5	65	5
	TOTAL	0	0	0	0	0	180	230	230	1,355	1,585	1,929	2,004	2,093	2,182	2,032	1,952	1,832	1,832	1,832	1,697	22,965	2,871